

Simulation estimates

DATA

- ProtoDUNE – 1 interaction + 60 cosmics over 6 APA
- FD – 1 interaction + 150 APA of noise
- ND – 10? interactions + 60 cosmics
- Currently 1 interaction takes about 10 minutes to reconstruct
- Difference is we read whole detector and many empty events

MC

- ProtoDUNE – 1 interaction + 60 cosmics over 6 APA
- FD - 1 interaction - don't need to simulate all 150 APA.
- ND – 1 interaction + overlay or same as data if not doing overlay
- Currently 1 interaction takes about 15 minutes to reconstruct, 45 to simulate
- MC can restrict to volume where event occurred.

that said, sim assumption need to be updated

PD

```
{"Raw":70, # MB from first beam test  
  "CPU":0.1667, #Hr/Event  
  "Sim-CPU":0.75, #Hr/Event  
  "Reco":35, #MB/Event  
  "Sim":220, #MB/Event  
}
```

40 M raw events expected

sim 5M/year << this is low

FD

```
"FD":  
  {"Raw":1750, #MB  
   "CPU":1.25, #Hr/Event  
   "Sim-CPU":0.75, #Hr/Event  
   "Reco":175, #MB/Event  
   "Sim":200, #MB/Event  
  }
```

Raw 4 M/year

Sim 10M/year

here are ND assumptions

ND

"ND":

```
{ "Raw": 10, #MB  
  "CPU": 0.05, #hrs/event  
  "Sim-CPU": 0.12, #hrs/event  
  "Reco": 20, #MB/event  
  "Sim": 50, #MB/event  
}
```

raw 25M events/year

sim 100M events/year

Compare to PD (previous page)

"PD":

```
{ "Raw": 70, # MB from first beam test  
  "CPU": 0.1667, #Hr/Event  
  "Sim-CPU": 0.75, #Hr/Event  
  "Reco": 35, #MB/Event  
  "Sim": 220, #MB/Event  
}
```

40 M raw events expected

sim 5M/year << this is low